

Remarks

The above amendments and these remarks are in reply to the Office Action dated February 23, 2005. Claims 1-11 and 13-33 were pending in the application prior to the outstanding Office Action. Claims 1, 8, 11, 14, 17, 24 and 30-33 are being amended, and claims 2, 15, 16 and 18 are being canceled, leaving claims 1, 3-11, 13-14, 17 and 19-33 for examination.

Based on the above amendments and the following remarks, reconsideration of the outstanding objections and rejections is requested.

I. Claim Objection

Claims 32 and 33 were objected to for depending from a claim (i.e., claim 40) that does not exist. These claims have been amended to depend from independent claim 31. Accordingly, it is respectfully requested that this objection be withdrawn.

II. Summary of Rejections

Claims 1-5, 8-10, 14-21, 24-26 and 29-33 were rejected under 35 USC §102(e) as allegedly being anticipated by US Patent 6,598,067 to Wydra et al. (hereafter referred to simply as "Wydra").

Claims 6, 7, 11, 13, 22, 23, 27 and 28 were rejected under 35 USC §103(a) as allegedly being unpatentable over Wydra et al. in view of US Patent 5,781,711 to Austin et al. (hereafter simply referred to as "Austin").

discussion of the claims begins on the next page

III. Discussion of Claims

A. Claims 1-7

Claim 1 is directed to a method for preparing a job (including a plurality of tasks) for execution by a batch job execution system. This method includes, after receiving a job (including a plurality of tasks) from an external source, selecting a program which may be used in executing the job.

Applicants do not agree with the previous rejections of claim 1. However, to expedite issuance of a patent, Applicants have amended claim 1 to further distinguish it from Wydra. Support for these amendments is provided in the specification as originally filed (e.g., at page 16, line 16 - page 18, line 9). More specifically, claim 1, as amended, requires that the selected program has a first part that includes:

- *a plurality of steps, wherein each step identifies a service which is offered by the batch job execution system which can be used in executing at least a portion of one of the tasks of the batch job; and*
- *information about data dependencies between the steps, so that the batch job execution system can determine whether an output of one of the tasks associated with a first one of the steps is needed as an input for a second one of the steps, and thus whether the second step can be started before the first step.*

The above described features of claim 1 allow tasks of a batch job to be reliably executed with maximum parallelism. For example, a batch job may contain a set of Word files and a set of gif files, both of which are to be converted into HTML files. Such a job may have two tasks, one would include the Word files that are to be converted to HTML and the other would include the gif files that are to be converted to HTML. Since these tasks are independent of one another they may be performed in parallel. The step assigned to the first task would include information indicating that the task is to be assigned to a service which offers Word to HTML conversion. The step associated with the other task would include information indicating that the task is to be assigned to a service which offers gif to HTML conversion.

Continuing with this example, the batch job may further include the task of printing and mailing the converted HTML files. This task is dependent on the output of the first two tasks

and thus cannot be performed until each has been completed. The step associated with this task would include information indicating that the task is to be assigned to a service which offers printing of HTML files and mailing. By providing information about data dependencies between the steps, the batch job execution system would be able to determine whether an output of one of the tasks associated with a first one of the steps (e.g., associated with converting a gif file to an HTML file) is needed as an input for a second one of the steps (e.g., associated with printing and mailing the converted HTML file), and thus whether the second step can be started before the first step.

Wydra does discuss a schedule controller 36, which "establishes and maintains a schedule for the execution of each requested service, and notifies the client computer 22 requesting the service upon completion of the service" (see Wydra, column 6, lines 9-13). Further, Wydra discusses a conventional load balancer 148 "to determine which of the candidate application services is most ideally suited--from an overall system load perspective--as a preferred application server to execute the requested service" (see Wydra, column 12, lines 23-27). However, Wydra does not teach or suggest that its schedule controller or load balancer selects a program that includes "a plurality of steps, wherein each step identifies a service which is offered by the batch job execution system which can be used in executing at least a portion of one of the tasks of the batch job," as is required by claim 1. Further, Wydra does not teach or suggest that the selected program also includes "information about data dependencies between the steps, so that the batch job execution system can determine whether an output of one of the tasks associated with a first one of the steps is needed as an input for a second one of the steps, and thus whether the second step can be started before the first step," as is also required by claim 1.

Further, certain portions of Wydra make it clear that Wydra's scheduling is performed on a simply time basis that does not take into account data dependencies. For example, at column 7, starting on line 50, Wydra explains that the schedule controller 36 checks jobs (or services) to be executed, and if a service is to be executed at this time, the schedule controller 36 instructs the connection controller 34 to create an instance of a process. Further, at column 6, lines 8-13, Wydra explains that the schedule controller 36 establishes and maintains a schedule for execution of each requested service.

For at least these reasons, Applicants respectfully request that the 102(e) rejection of claim 1 be reconsidered and withdrawn.

Applicants also believe that claims 3-7, which depend from claim 1, are patentable over Wydra for at least the reasons discussed above, as well as for the additional features that they add.

B. Claims 8-10

Claim 8 as amended, which relates to a method for preparing a batch job, requires:

- *receiving a batch job comprising a plurality of tasks, by a first part of the batch job execution system, wherein the batch job may be executed using a plurality of service providers;*
- *determining for the tasks of the batch job a service type, offered by a service provider of the batch job execution system, which may be used for performing the task;*
- *creating at least one step for each of the plurality of tasks, wherein the steps comprise a first reference to the determined service type needed to perform the task, and a second reference to the task;*
- *determining an efficient way to organize the created steps for execution by the batch job execution system;*
- *preparing a program which comprises the created steps, and the organization of steps for execution by the batch job execution system; and,*
- *transmitting the batch job and the prepared program toward a second part of the batch job execution system.*

It was alleged in the Office Action that column 5, lines 54-67 of Wydra teaches "preparing a program which comprises the created steps, and the organization of steps for execution by the batch job execution system," and "transmitting the batch job and the prepared program toward a second part of the batch job execution system." However, this portion of Wydra merely says that the client computer 22 of Wydra will transmit a service request (job) to the listener 32 of the application server 24 to which the client is coupled, if the application server 24 can execute the requested service (job); and that the service broker 30 will keep track of which application server is executing which service request. However, this portion of Wydra clearly does not teach or suggest, "*preparing a program which comprises the created steps*, and

the *organization of steps* for execution by the batch job execution system," as is required by claim 8.

Wydra discusses using load balancing (e.g., at column 12, lines 6-31). However, Wydra's load balancing is on a service request by service request (i.e., job by job) basis. In contrast, in claim 8 as amended, a batch job includes a plurality of tasks, and at least one step is created for each of the plurality of tasks before an efficient way for organizing the steps is determined. Additionally, in claim 8, a program is prepared, where the program includes the created steps and the determined organization. Further, in claim 8, the batch job and the prepared program (including the created steps and the determined organization) are transmitted toward a batch job execution system. Accordingly, in claim 8, the efficient organization is on a step by step basis, where there are many steps associated with a single job. In contrast, as mentioned above, any load balancing in Wydra appears to be on a job by job basis.

In the Examiner's "Response to Arguments" (in Section 32 of the Office Action, in response to argument (5)), the Examiner had stated that claim 8 did not bring out certain claimed feature (e.g., that efficient organization was on a step by step basis), because claim 8 had not required more than one task. Now that claim 8 requires that the batch job comprises a plurality of tasks, the Examiner's previous reasoning for rejecting claim 8 should be overcome.

For at least the reasons discussed above, Applicants respectfully request that the 35 U.S.C. 102(e) rejection of claim 8, and its dependent claims 9-10, be withdrawn.

C. Claims 11-13

The steps of claim 11, which are performed by the service provider, describe a method in which the service provider can utilize a remote platform to convert information. Claim 11 requires that "the step of making a call to start a session [with a remote platform, in response to receiving a task of a batch job] further comprises creating a unique address which identifies the session; and the step of making a call to end the session [with the remote platform] terminates the unique address." In the rejection of claim 11, it was alleged in the Office Action that column 11, lines 3-20 of Austin teaches these features.

In the previous Reply, Applicants argued that column 11, lines 3-20 of Austin merely discusses a bus gateway device that provides an interface between a host bus and a video bus by translating virtual addresses to real addresses, and thus does not teach or suggest the above

specified features of claim 11. In the Examiner's "Response to Arguments" (in Section 32 of the Office Action, in response to argument (6)), the Examiner simply disagreed with Applicants' previous arguments without providing any explanation other than saying to see the previous rejection.

In asserting that Austin teaches "the step of making a call to start a session [with a remote platform, in response to receiving a task of a batch job] further comprises creating a unique address which identifies the session; and the step of making a call to end the session [with the remote platform] terminates the unique address," the Examiner has only said to see column 11, lines 3-20 of Austin, without providing any further explanation for the rejection. As explained above, this portion of Austin merely explains that a bus gateway device provides an interface between a host bus and a video bus by translating virtual addresses to real addresses. Converting virtual addresses to real addresses is a well known memory mapping technique that has nothing to do with starting and ending sessions with a remote platform, as is required by claim 11.

Applicants respectfully request that the Examiner reconsider and withdraw this rejection of claim 11, and its dependent claim 13. If the Examiner is to maintain this rejection, Applicants respectfully request that the Examiner explain in more detail how column 11, lines 3-20 of Austin teach these particular features of claim 11.

D. Claims 14-16

Claim 14 has been amended to include the features of its dependent claims 15 and 16 (now canceled), and to make it more clear as to which portions of the batch job execution system are doing what.

For the convenience of the Examiner, claim 14 as amended is shown below:

14. (Currently Amended) A method for preparing and executing a task of a batch job by a batch job execution system, comprising the steps of:

receiving at a first service provider of the batch execution system, the task to be executed from a job management apparatus of the batch job execution system;

in response to receiving the task from the job management apparatus, creating a plurality of steps at the first service provider which must be executed by a plurality of other service providers in order to complete the task;

transmitting the plurality of steps to be completed, from the first service provide toward the job management apparatus of the batch job execution system for execution, so that the job management apparatus can distribute the plurality of steps to a plurality of other service providers that will execute the plurality of steps;

receiving at the first service provider a plurality of results from the job management apparatus of the batch job execution system once the plurality of steps have been executed by a plurality of other service providers; and,

preparing at the first service provider an output comprising the plurality of results.

Claim 14 is directed to a method for preparing and executing a task of a batch job execution system, where the batch job execution system includes a job management apparatus and a plurality of service provides that can communicate with the job management apparatus.

As claimed, a first service provider, after receiving a task from the job management apparatus, creates a plurality of steps which must be executed by a plurality of other service providers in order to complete the task. The first service provider then transmits the plurality of steps toward the job management apparatus, so that the job management apparatus can distribute the plurality of steps to the plurality of other service providers that will execute the plurality of steps. After the plurality of service providers execute the plurality of steps (and send the results back to the job management apparatus), the first service provider receives the plurality of results from the job management apparatus, and the first service provider prepares an output that includes the plurality of results.

In summary, claim 14 explains that when a first service provider receives a task from a job management apparatus, the first service provider can create a plurality of steps to be executed by other service providers, rather than completing the task on its own. The first service provider transmits these steps back to the job management apparatus, so that the job management apparatus can distribute the steps to other service providers that will execute the plurality of

steps. The first service provider will then receive the results from the job management apparatus and will display the results.

In rejecting original claims 14-16, it was asserted in the Office Action that the claimed "job management apparatus" was taught by the "service broker 30" in FIG. 6 of Wydra, and discussed at column 5, lines 54-67. It was also asserted in the Office Action that the claimed plurality of service providers was taught by the multiple application servers 24-1 through 24-M of Wydra, discussed at column 8, lines 35-54 of Wydra.

Specifically, in rejecting claim 14, it was asserting in the Office Action that column 7, lines 50-64 of Wydra teaches that the first service provider (previously referred to as "the second portion of the batch job execution system"), in response to receiving the task, creates a plurality of steps which must be executed by a plurality of other service providers in order to complete the task. Applicants again respectfully disagree with this assertion. Further, now that claim 14 has been amended, Applicants believe that it is even more clear that Wydra does not teach this step.

Column 7, lines 50-64 of Wydra explains that an instance of a process can be created to execute jobs (or services) when the jobs (or services) are scheduled to be executed. This portion of Wydra also explains that the connection controller 34 can be instructed to create a connection to an application server 24, and that the connection controller 34 can create an instance of a process. However, this portion of Wydra does not teach or suggest that one of Wydra's applications servers 24-1 through 24-M, in response to receiving a task (or requested service) can create a plurality of steps to be executed by other application servers, rather than executing the requested service itself. For at least this reason, Applicants respectfully request that the 35 U.S.C. 102(e) rejection of claim 14 be reconsidered and withdrawn.

E. Claims 17-23

Applicants believe that claim 17 as amended, and its dependent claims 19-23, are patentable over Wydra for reasons similar to those discussed above with reference to claim 1 and its dependent claims.

F. Claims 24-26

Applicants believe that claim 24 as amended, and its dependent claims 25-26, are patentable over Wydra for reasons similar to those discussed above with reference to claim 8 and its dependent claims.

G. Claims 27-28

Applicants believe that claim 27 as amended, and its dependent claims 28, are patentable over Wydra for reasons similar to those discussed above with reference to claim 11 and its dependent claims.

H. Claim 29

Applicants believe that claim 29 is patentable over Wydra for reasons similar to those discussed above with reference to claim 14.

I. Claim 30

Applicants believe that claim 30 as amended is patentable over Wydra for reasons similar to those discussed above with reference to claim 17.

J. Claim 31

Applicants believe that claim 31 as amended is patentable over Wydra for reasons similar to those discussed above with reference to claim 8.

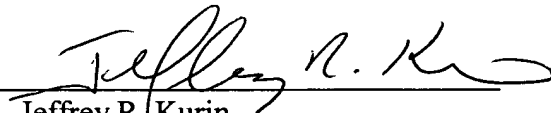
IV. Conclusion

In light of the above, it is respectfully requested that all outstanding rejections and objections be reconsidered and withdrawn. The Examiner is respectfully requested to telephone the undersigned if he can assist in any way in expediting issuance of a patent.

The Commissioner is authorized to charge any underpayment of fees or credit any overpayment to Deposit Account No. 06-1325 for any matter in connection with this response, including any fee for extension of time, which may be required.

Respectfully submitted,

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